

WHAT IS CLAIMED IS

1. A stable motor fuel composition having reduced emission of pollutants, said motor fuel composition comprising:

(a) an oxygen-containing component comprising at least two oxygen-containing organic compounds, said oxygen-containing organic compounds containing in total at least four oxygen-containing functional groups comprising alcohol, ether, aldehyde, ketone, ester, inorganic ester, acetal, epoxide or peroxide, wherein each of said oxygen-containing organic compounds contains at least one of said oxygen-containing groups; and, optionally,

(b) a hydrocarbon component.

2. The motor fuel composition of claim 1, wherein the oxygen-containing component comprises at least four of said oxygen-containing organic compounds.

3. The motor fuel composition of claim 2, wherein each of said oxygen-containing organic compounds contains different said oxygen-containing functional groups.

4. The motor fuel composition of claim 2, wherein each of said oxygen-containing organic compounds contains two of said oxygen-containing functional groups.

5. The motor fuel composition of claim 2, wherein each of said oxygen-containing organic compounds contains one of said oxygen-containing functional groups.

6. The motor fuel composition of claim 1, wherein at least two of said oxygen-containing organic compounds contain at least one of the same oxygen-containing functional groups.

7. The motor fuel composition of claim 1, wherein the oxygen-containing organic compounds are linear or sparsely branched.

8. The motor fuel composition of claim 1, wherein the oxygen-containing organic component is present in an amount from about 5% to 100%, based on a total volume of the motor fuel composition, and the hydrocarbon component is present in an amount from 0 to about 95%, based on the total volume of the motor fuel composition.

9. The motor fuel composition of claim 1, wherein the oxygen-containing component comprises (i) an alcohol, (ii) an ether, (iii) an organic ester and (iv) at least one of an aldehyde, a ketone, an inorganic ester, an acetal, an epoxide and a peroxide.

10. The motor fuel composition of claim 9, wherein the oxygen-containing component comprises (i) an alcohol, (ii) an ether, (iii) an organic ester, (iv) an aldehyde, (v) a ketone, (vi) an inorganic ester, (vii) an acetal, (viii) an epoxide and (ix) a peroxide.

11. The motor fuel composition of claim 1, having at least one of the properties:

(i) density at 20°C of not less than 0.775 g/cm<sup>3</sup>;

(ii) cloud temperature is not higher than 0°C at atmospheric pressure;

(iii) stable at atmospheric pressure from a cloud temperature of 0°C to an initial boiling point of 50°C;

(iv) amounts of liquid evaporated by boiling at atmospheric pressure include:

- not more than 25% of the total volume of the motor fuel

composition distills at temperatures no higher than 100°C;

- not more than 35 % of the total volume .of the motor fuel

composition distills at temperatures no higher than 150°C;

- not more than 50% of the total volume of motor fuel

composition distills at temperatures no higher than 200°C ;

- not less than 98% of the total volume of the motor fuel

composition distills at temperatures no higher than 400°C, suitably

no higher than 370°C; and preferably no higher than 280°C;

(v) heat of combustion on oxidation by oxygen of not less than 39 MJ/kg;

(vi) self-ignition temperature from 150°C to 300°C; and

(vii) ability to accommodate at least 1% water by volume.

12. The motor fuel composition of claim 11, having at least two of the properties (i) to (iv).

13. The motor fuel composition of claim 11, having the properties (i) to (iv).

14. The motor fuel composition of claim 1, wherein the oxygen-containing component comprises at least one of methanol or ethanol.

15. The motor fuel composition of claim 14, further comprising by-products from production of said methanol or ethanol.

16. The motor fuel composition of claim 1, wherein the oxygen-containing component contains contaminants co-produced or present during production of said oxygen-containing component.

17. The motor fuel composition of claim 1, which is stable at atmospheric pressure over a temperature range from a cloud temperature of  $-35^{\circ}\text{C}$  to an initial boiling temperature of  $180^{\circ}\text{C}$ .

18. The motor fuel composition of claim 1, which is stable over a range of temperatures from a cloud point of  $-50^{\circ}\text{C}$  to an initial boiling point of  $50^{\circ}\text{C}$ .

19. The motor fuel composition of claim 1, further comprising water in an amount up to about 1% by volume based on the total volume of the motor fuel composition.

20. The motor fuel composition of claim 1, wherein the oxygen-containing component is formed from a renewable plant resource.

21. The motor fuel composition of claim 1, wherein the hydrocarbon component is a diesel fraction, or a mixture of a diesel fraction and a hydrocarbon fraction lighter than the diesel fraction.

22. The motor fuel composition of claim 1, wherein the hydrocarbon component is a gas oil fraction or a mixture of the gas oil fraction and a hydrocarbon fraction lighter than the gas oil fraction.

23. The motor fuel composition of claim 1, wherein the hydrocarbon component is obtained from renewable resources.

24. The motor fuel composition of claim 23, wherein the renewable resources comprise turpentine and rosin.

25. The motor fuel composition of claim 1, wherein the hydrocarbon component is obtained from a synthesis-gas, a C<sub>1</sub>-C<sub>4</sub> gas-containing fraction or a pyrolysis of carbonaceous materials.

26. The motor fuel composition of claim 25, wherein the synthesis-gas is obtained from biomass.

27. The motor fuel composition of claim 25, wherein the pyrolysis of carbonaceous materials comprise biomass or a mixture thereof.

28. The motor fuel composition of claim 1, which has lubricating properties.

29. The motor fuel composition of claim 1, which has a flash point of at least 50°C.

30. A method of preparing the motor fuel composition of claim 1, comprising successively introducing into a fuel reservoir at a constant temperature at least said oxygen-containing component comprising at least two oxygen-containing compounds, beginning with a compound having a lowest density at said temperature and terminating with a compound having a highest density at said temperature.

31. A method of reducing deposits in a combustion chamber of an engine comprising introducing into said combustion chamber a motor fuel composition comprising an oxygen-containing component containing in total at least two oxygen-containing organic compounds, said oxygen-containing organic compounds comprising at least four oxygen-containing functional groups comprising alcohol, ether, aldehyde, ketone, ester, inorganic ester, acetal, epoxide or peroxide, wherein each of said oxygen-containing organic compounds contains at least one of said oxygen-containing groups.